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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,618	01/04/2001	Rainer Pflug	PFLUG	4677
20151	7590	11/02/2005	EXAMINER	
HENRY M FEIEREISEN, LLC			SY, MARIANO ONG	
350 FIFTH AVENUE			ART UNIT	
SUITE 4714			PAPER NUMBER	
NEW YORK, NY 10118			3683	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/754,618	Applicant(s) PFLUG ET AL.	
	Examiner Mariano Sy	Art Unit 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The response filed on August 22, 2005 has been received.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niina (US 5,921,684) in view of "Technical Book, Ball and Roller Bearings, Publisher John Wiley & Sons, Third Edition, pp. 38-41.

Re-claims 1 and 12 Niina discloses, as shown in fig. 5, a thrust ball bearing 14 comprising first 14a and second 14b circular ring shaped bearing disks moving

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eccentrically to one another, and bearing balls 14c for rolling along circular tracks 11a, 13a.

However Niina fails to disclose said first and second bearing disks made from a through-hardened ferrous material of martensitic structure (which has a hardness of at least 700 HV) across an entire cross section.

Technical book, Ball and Roller Bearings, publisher John Wiley & Sons, third Edition, pp. 38-41 teaches the rolling contact components (such as bearing rings which are the raceways and rolling elements which are the balls) are through-hardened by swiftly quenching the heated components in oil or salt baths; the heat treatment changes the microstructure of the material (austenite when red-hot) into martensite, see last paragraph of page 38 and line 1 of page 39 and Table 1.2 on page 39 under steel grade of "C 75" which contains 0.70 to 0.80% of C, 0.15 to 0.35% of Si, 0.60 to 0.80% of Mn, 0 to 0.045% of P, 0 to 0.045% of S which is the same as disclosed by applicant's specification on page 5, lines 3-4 will have a hardness of at least 700 HV.

One well versed in the art would have been instructed by the "Technical Book" reference suitable for bearing use the known through-hardened ferrous material of martensitic structure across an entire cross section to use as the bearing disks of Niina, in order to extend the usage and life of the bearings.

Re-claims 2, 3, 8, and 9 Niina was silent to show wherein the bearing disk are made of unalloyed, low-alloy or high-alloy ferrous material and made of a steel selected from the group consisting of C 45, C 55, C67, C 75. Technical book, Ball and Roller Bearings teaches bearing disks made of unalloyed, low-alloy or high-alloy ferrous

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material and made of a steel selected from the group consisting of C 45, C 55, C67, C 75. It would have been obvious to one of ordinary skill in the art to have use the wide array of alloy material to be used in the bearing disks of Niina, in view of the teaching of Technical book, Ball and Roller Bearings, depending upon the size, load, and environment being applied.

Re-claim 6 Niina discloses, as shown in figure 5, thrust ball bearing for use in a scroll compressor having a housing 13, a revolving scroll member 11 mounted on a crank pin of a shaft 15a, a stationary scroll member 12, said first bearing disk connected with the revolving scroll member and said second bearing disk securely fixed to the housing, whereby a compressor space P is formed during interaction of the revolving and the stationary scroll member.

Re-claims 7 and 13, Niina discloses, as shown in fig. 5, a scroll compressor comprising: a housing 13, a stationary scroll member 12, a revolving scroll member 11, a compression space P, a thrust ball bearing 14 having a first bearing disk 14a, a second bearing disk 14b, and bearing balls 14c.

However Niina fails to disclose said first and second bearing disks made from a through-hardened ferrous material of martensitic structure across an entire cross section.

Technical book, Ball and Roller Bearings, publisher John Wiley & Sons, third Edition, pp. 38-41 teaches the rolling contact components (such as bearing rings which are the raceways and rolling elements which are the balls) are through-hardened by swiftly quenching the heated components in oil or salt baths; the heat treatment

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changes the microstructure of the material (austenite when red-hot) into martensite, see last paragraph of page 38 and line 1 of page 39 and Table 1.2 on page 39 under steel grade of "C 75" which contains 0.70 to 0.80% of C, 0.15 to 0.35% of Si, 0.60 to 0.80% of Mn, 0 to 0.045% of P, 0 to 0.045% of S which is the same as disclosed by applicant's specification on page 5, lines 3-4 will have a hardness of at least 700 HV.

One well versed in the art would have been instructed by the "Technical Book" reference suitable for bearing use the known through-hardened ferrous material of martensitic structure across an entire cross section to use as the bearing disks of Niina, in order to extend the usage and life of the bearings.

Re-claims 4, 5, 10, and 11 Niina disclosed the bearing disks made by non-cutting shaping process which is produced by "press work" (see col. 4, lines 18-22). Thus, the claimed product, i.e., the thrust ball bearing of claim 4 and scroll compressor of claim 10 would have been obvious.

One of ordinary skill in the art would have expected the press-work to proceed at typical shaping speed; as for the specific speed of shaping, as claimed, would not effect the difference in feature in the final product and thus the final product would not be distinguishable from the prior art.

These claims are recognized as Product by Process claims. The determination of patentability is based on the product itself, even though the claim may be limited and defined by the process. The product in such claim is unpatentable if it is the same as or obvious from the product of the prior art, even if the prior product was made by a

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different process. See *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985).

5. Applicant's arguments filed on August 22, 2005 have been fully considered but they are not persuasive.

Examiner maintains the rejection is proper. Technical Book teaches through-hardened (heat treated) of bearing steel components such as most rings and rolling elements. One of ordinary skill in the art would have been motivated to use the known through-hardened steel (taught by Technical Book) with the invention of Niina since this material would permit hardening to any depth, the intended objective of Niina.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariano Sy whose telephone number is 571-272-7126. The examiner can normally be reached on Mon.-Fri. from 8:30 A.M. to 2:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan, can be reached on 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 M. Sy

October 17, 2005


JAMES MCCLELLAN
PRIMARY EXAMINER
10/21/05